

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A vocoder system comprising:
formant detection means for analyzing a first musical tone signal to detect formant characteristics of the first musical tone signal;
musical tone signal input means for inputting a second musical tone signal that corresponds to specified pitch information;
division means for dividing the second musical tone signal into a plurality of frequency bands, the respective center frequencies of which have been fixed;
setting means for setting modulation levels only at the fixed center frequency of each of the frequency bands, relative to other frequencies of each of the frequency bands, based on the formant characteristics and formant control information with which the formant characteristics detected by the formant detection means are changed; and
modulation means for modulating a level of a signal of each of the frequency bands based on the modulation level set in the setting means.
2. (Original) The vocoder system cited in Claim 1, wherein the formant detection means comprises a filter.
3. (Original) The vocoder system cited in Claim 1, wherein the formant detection means comprises a Fourier transform.
4. (Original) The vocoder system cited in Claim 1, wherein the division means comprises a filter.
5. (Original) The vocoder system cited in Claim 2, wherein the division means comprises a filter.

6. (Original) The vocoder system cited in Claim 3, wherein the division means comprises a filter.

7. (Original) The vocoder system cited in Claim 1, wherein the division means comprises a Fourier transform.

8. (Original) The vocoder system cited in Claim 2, wherein the division means comprises a Fourier transform.

9. (Original) The vocoder system cited in Claim 3, wherein the division means comprises a Fourier transform.

10. (Original) The vocoder system cited in Claim 1, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

11. (Original) The vocoder system cited in Claim 2, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

12. (Original) The vocoder system cited in Claim 3, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information

13. (Original) The vocoder system cited in Claim 4, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

14. (Original) The vocoder system cited in Claim 5, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

15. (Original) The vocoder system cited in Claim 6, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

16. (Original) The vocoder system cited in Claim 7, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

17. (Original) The vocoder system cited in Claim 8, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

18. (Original) The vocoder system cited in Claim 9, wherein the setting means sets the modulation levels by interpolation processing based on the formant characteristics and the formant control information.

19. (Original) The vocoder system cited in Claim 1, wherein the setting means sets the modulation levels based on pitch information, the formant characteristics and the formant control information.

20. (Original) The vocoder system cited in Claim 2, wherein the setting means sets the modulation levels based on pitch information, the formant characteristics and the formant control information.

21. (Original) The vocoder system cited in Claim 3, wherein the setting means sets the modulation levels based on pitch information, the formant characteristics and the formant control information.

22. (Original) The vocoder system cited in Claim 4, wherein the setting means sets the modulation levels based on pitch information, the formant characteristics and the formant control information.

23. (Original) The vocoder system cited in Claim 5, wherein the setting means sets the modulation levels based on pitch information, the formant characteristics and the formant control information.

24. (Original) The vocoder system cited in Claim 6, wherein the setting means sets the modulation levels based on musical interval information, the formant characteristics and the formant control information.

25. (Original) The vocoder system cited in Claim 7, wherein the setting means sets the modulation levels based on musical interval information, the formant characteristics and the formant control information.

26. (Original) The vocoder system cited in Claim 8, wherein the setting means sets the modulation levels based on musical interval information, the formant characteristics and the formant control information.

27. (Original) The vocoder system cited in Claim 9, wherein the setting means sets the modulation levels based on musical interval information, the formant characteristics and the formant control information.

28. (Original) The vocoder system cited in Claim 1, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

29. (Original) The vocoder system cited in Claim 2, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

30. (Original) The vocoder system cited in Claim 3, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

31. (Original) The vocoder system cited in Claim 4, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

32. (Original) The vocoder system cited in Claim 5, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

33. (Original) The vocoder system cited in Claim 6, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

34. (Original) The vocoder system cited in Claim 7, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

35. (Original) The vocoder system cited in Claim 8, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

36. (Original) The vocoder system cited in Claim 9, wherein the setting means stores a formant change table that changes the formant non-uniformly and sets the modulation levels that correspond to each of the frequency bands based on the change table.

37. (Currently Amended) A method for generating a musical signal with a computer system comprising a detector, an input device, a frequency divider, and a processor, the method comprising:

analyzing a first musical tone signal with the detector to detect formant characteristics of the first musical tone signal;

inputting a second musical tone signal into the input device that corresponds to specified pitch information;

dividing the second musical tone signal with the frequency divider into a plurality of frequency bands, the respective center frequencies of which have been fixed;

setting modulation levels with the processor only at the fixed center frequency of each of the frequency bands, ~~relative to other frequencies of each of the frequency bands~~, based on the formant characteristics and formant control information with which the formant characteristics detected by the formant detection means are changed; and

modulating with the processor a level of a signal of each of the frequency bands based on the modulation level.

38. (Currently Amended) A vocoder system comprising:
a formant detector for analyzing a first musical tone signal to detect formant characteristics of the first musical tone signal;
an input device for inputting a second musical tone signal that corresponds to specified pitch information;

a divider connected to the input device for dividing the second musical tone signal into a plurality of frequency bands, the respective center frequencies of which have been fixed;

a level setter for setting modulation levels, ~~relative to other frequencies of each of the frequency bands,~~ only at the fixed center frequency of each of the frequency bands based on the formant characteristics and formant control information with which the formant characteristics detected by the formant detection means are changed; and

a modulator for modulating a level of a signal of each of the frequency bands based on the modulation level set in the level setter.

39. (Previously Presented) The vocoder system cited in Claim 38, wherein the formant detector comprises a filter.

40. (Previously Presented) The vocoder system cited in Claim 38, wherein the formant detector comprises a Fourier transform.

41. (Previously Presented) The vocoder system cited in Claim 1, wherein the first musical tone signal is produced by a male voice or a female voice.

42. (Previously Presented) The vocoder system cited in Claim 1, wherein the level of the signal of each of the frequency bands modulated by the modulation means is an amplitude of the signal.

43. (Previously Presented) The vocoder system cited in Claim 1, wherein, in the modulation means, the center frequencies of the frequency bands are maintained as fixed in the division means.

44. (Previously Presented) The vocoder system cited in Claim 10, wherein the setting means sets the modulation levels by using a polynomial interpolation.

45. (Previously Presented) The vocoder system cited in Claim 1, wherein the center frequencies of the modulated signals of the frequency bands are equal to the respective center frequencies of the frequency bands, as fixed by the division means.

46. (Previously Presented) The vocoder system cited in Claim 1, wherein the first musical tone signal is a speech signal.

47. (Previously Presented) The vocoder system cited in Claim 10, wherein the setting means sets the modulation level at the fixed center frequency of at least one of the frequency bands by interpolation processing based on the formant characteristics at a plurality of frequencies.

48. (Previously Presented) The vocoder system cited in Claim 44, wherein the setting means sets the modulation level at the fixed center frequency of at least one of the frequency bands by using a polynomial interpolation of the formant characteristics at a plurality of frequencies.

49. (Previously Presented) The vocoder system cited in Claim 4,
wherein the filter comprises a digital filter having frequency characteristics defined by a plurality of filter coefficients, and
wherein the setting means sets the modulation levels, free of changing the filter coefficients.

50. (Previously Presented) The vocoder system cited in Claim 4,
wherein the filter comprises a digital filter having frequency characteristics defined by a plurality of filter coefficients, and
wherein the setting means sets the modulation levels while the filter coefficients remain constant.

51. (Cancelled).

52. (Currently Amended) A vocoder system comprising:

formant detection means for analyzing a first musical tone signal to detect formant characteristics of the first musical tone signal;

musical tone signal input means for inputting a second musical tone signal that corresponds to specified pitch information;

filtering means for dividing the second musical ~~tone signals~~ tone signal into a plurality of frequency bands based on respective fixed center frequencies;

setting means for setting modulation levels only at the fixed center frequency of each of the frequency bands based on the formant characteristics and formant control information with which the formant characteristics detected by the formant detection means are changed; and

modulation means for modulating a level of a signal of each of the frequency bands based on the modulation level set in the setting means.

53. (New) The vocoder system cited in claim 38, the system further comprising:

a formant changer for changing the formant characteristics detected by the formant detector, the formant changer for changing the formant characteristics based on the formant control information.